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Office of Technology Management

TRACKABLE PEDICLE SCREWS FOR IMPROVING SPINAL FUSION SURGERY

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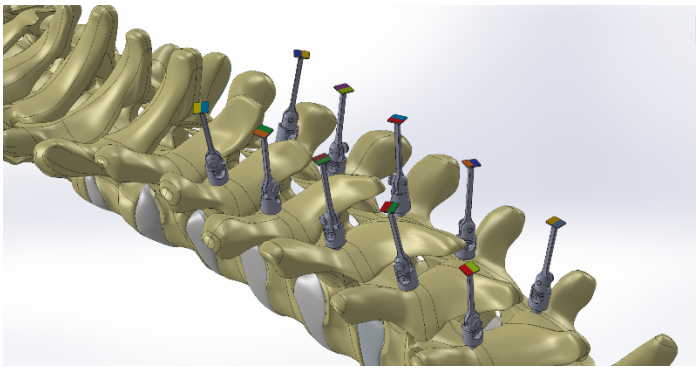
Value Proposition: *Non-obstructing trackable pedicle screw system that streamlines the rod-shaping process for surgeons.*

Technology Description

Researchers at Washington University in St. Louis have developed a system that uses lenticular arrays to better track pedicle screw placement during spinal fusion surgery. Spinal rods and pedicle screws are used to provide improved spinal stability and strength during spinal correction and fusion surgery. Pedicle screws are inserted into the vertebrae at each relevant pedicle then a rod is manually bent and secured with the screws. The current bending process that is used during spinal fusion surgery is a time-consuming, demanding process for surgeons and at times, can produce suboptimal results.

This invention utilizes a trackable marker design to leverage lenticular arrays, providing scree orientation data for the markers in space and allowing for the more accurate calculation of the position of screws in space. By enabling an accurate assessment of the screws' locations, this system allows for computer-automated spinal rod bending, thus streamlining the rod-shaping process and lead to shorter operating times and improved patient outcomes.



Stage of Research

The researchers have conceptualized and manufactured the screw tracking system, and *in vivo* accuracy testing has been performed.

Applications

- Spinal correction and fusion surgery

Key Advantages

- Enables accurate assessment of screw location
- Allows for computer-automated spinal rod bending

Patents
Pending

Related Web Links – Eric Leuthardt Profile; Leuthardt Lab